

Outlook for World Milk Powder Trade

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by

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Summary

This paper reviewing the outlook for world trade in milk powders (non-fat dry milk and whole milk powder) is written from an Australian Dairy Industry perspective.

The paper reviews historical trends from 1990 to 2000 (for trade volumes) and from 1990 to 2001 for free on board (fob) prices. While historical trends cannot predict the future they act as a guidepost.

The second half of the paper is focussed on factors likely to influence pricing trends for non-fat dry milk (NDM) and whole milk powder (WMP) in the medium term i.e. up to end 2006. Predictions on trade volumes are not made except to state NDM will be largely price driven i.e. fluctuate considerable from year to year while WMP is expected to continue expanding. The competitive price of substitutes such as whey and vegetable proteins will be a major influence on NDM volumes.

All prices are in US dollars and the metric system is used. To convert from one tonne to '000 pounds multiply by 2.204616.

Dairy, however, is one of the most protected industries globally. The OECD estimated for 2000 (1995 in brackets) the following producer subsidy equivalents in percentage terms for milk;

- European Union 43 per cent (60),
- USA 50 per cent (38),
- Japan 81 per cent (88), and
- Canada 59 per cent (57)¹.

Across all OECD nations the percentage PSE for milk of 48 per cent (54) was only exceeded by rice of 82 per cent and sugar's 50 per cent. The percentage PSE on all agricultural products was 34 per cent i.e. Milk received almost half as much again as the average level of government assistance to all agriculture commodities.

¹ *Agricultural Policies in OECD Countries. Monitoring and Evaluation, 2001. OECD.*

Percentage PSE is the total value of transfers as a percentage of the total value of production (valued at domestic producer prices) adjusted to include direct payments but exclude levies on production.

The Australian Dairy Industry between mid 1986 and mid 2000 undertook a phased removal of Government price support for both manufactured and fluid milk. Australia over the period 1990 to 2000 emerged clearly as the third largest dairy exporting nation after the European Union (EU) and New Zealand. On a milk equivalent bases Australia's share of a growing world trade rose from six per cent to sixteen per cent.

This growth was driven by expansion of milk production at a compound rate of over five per cent per annum. With a mature domestic market the Australian dairy sector became increasingly export oriented. The share of milk production exported rose from estimated 31 per cent in 1990 (1.942 billion litres) to 57 per cent in 2000 (6.159 billion litres).

Dairy trade liberalisation, for example the phasing out of export subsidies (to zero) and increased access as an outcome of the Doha Round of multilateral trade negotiations may have a greater impact upon sourcing of supply than spurring growth in trade volumes.

The Doha Round is occurring against the backdrop of globalization of dairy supply channels from farm to the plate. Globalization may play a greater role in shaping investment decisions on production and processing facilities. This will result in increased trade flows from low cost producing regions to major population centers. However, in some cases such as Brazil and India they are one and the same.

Supply may also split into more discrete product groups determined by proximity to markets, technical expertise, other competitive advantages and "tradition"². While the groups are not mutually exclusive an emerging export focus could be:

- EU-25 including the ten candidate countries - cheeses
- Oceania - value added dairy ingredients and cheese for processing
- U.S. - whey protein and lactose ingredients because the price support system is not a constraining factor
- South America (Argentina, Brazil, Colombia, Uruguay), India and further down the track members of the Former Soviet Union (FSU) particularly the Ukraine - commodity dairy products.

Trade flows will also shift as a result of the ongoing influence of regional and bilateral trade agreements and domestic industry political agitation - the latter leading to trade disputes. Regional trade pacts can foster trade for those inside the tent but distort the global trading pattern.

Two major impacts could arise from the rush to sign regional trade pacts by the largest economies, the U.S. and EU.

Agreement on a Free Trade Area of the Americas, enlargement of the EU-15 to EU-25 by 2004 and a EU-Mercosur pact, provided substantive agricultural trade

² *Tradition can be a powerful marketing tool. For example in Japan Europe is regarded as the "home" of dairy products. Tradition can also play a powerful role in marketing of specialty dairy products, particularly cheeses. Again Europe has a marketing advantage in this area.*

liberalization is included in all agreements, could segment or balkanize trade into more discrete regions, such as

- The Americas,
- Europe and FSU,
- East and Southeast Asia

With competition between supply regions largely focused on the Middle East and Africa.

The second major impact could be the locking out of Oceania origin product from major dairy consumption growth regions, particularly Latin America because of the absence of preferential access.

This could at least temporarily reverse the trend to global sourcing.

However, while there is a hiatus of at least five years between the end of the Uruguay Round and beginning of the implementation period of the Doha Round a key influence in buyers sourcing perceptions is the intent during the agricultural negotiations to reduce, with a view to phasing out, all forms of export subsidies.

This will reinforce the emerging change in sourcing preferences towards the end of the Uruguay Round period in the late 1990s. The chief catalyst was the EU exports approaching or reaching their volume ceilings in cheese, NDM and 'other products' groups. The latter includes WMP. The volume ceiling in butterfat (butter and butteroil) is highly unlikely to be ever reached.

Given their growing dominance of world trade, perception of clean and green, export focus and perceived ability to expand production the Oceania nations of Australia and New Zealand are potentially the main beneficiaries of world dairy trade liberalisation.

However, there are other potential winners whose relative gain may be greater, assuming export subsidies are phased to zero and substantive improvements in market access are gained. They include exporters from South American nations; notably Argentina, Uruguay and Brazil provided infrastructure, political and food safety issues (for example foot and mouth) are satisfactorily addressed in the minds of key ingredient end-users.

Another potential winner is India. India is a huge producer of milk with a low cost of production.

Central and Eastern European nations (CEEC) with relatively low costs of milk production are potential beneficiaries from trade reform. However, with EU membership beckoning in 2004 for up to ten of these nations³ the prospect of milk quotas being agreed at levels below their medium term production potential may result in a gradual decline in their collective exportable surplus. Key influences are restructuring, relatively small limits on subsidised export volumes plus the attraction of marketing product in an expanded EU.

³ *Ten nations (Poland, Czech Republic, Slovakia, Slovenia, Latvia, Estonia, Lithuania, Hungary, Malta, and Cyprus) are slated to join en-block by 2004.*

The trade outlook for the U.S. and current EU-I5 is more problematic. A key issue is whether phasing out of export subsidies will leave a large (volume) vacuum in commodity trade as a result of the EU's participation being increasingly constrained by limits on the value of export subsidies and also the volume.

- A vacuum sufficiently large to result in world milk protein prices rising to the level where the U.S. could be a regular non-subsidizing exporter of NDM if the support price is not substantially above that of the EU's.

The EU, however, will reduce the support price for NDM (and butter) by a cumulative 15 per cent by 1 April, 2007 and a consistent downward trend in NDM production (almost halved between 1990 and 2001) suggest their exportable surplus will shrink. The EU's competitive position for WMP is less secure because their support price for milkfat is hugely above the fob price.

The ability of the U.S. industry to take advantage of the erosion of the EU's competitive advantage through phasing out of export subsidies is severely hampered by rolling over of the existing support price regime. A five-year farm bill extending the current NDM support price to end September 2007 will, in the absence of a sharp turnaround in the current dollar/Euro exchange rate values will make it more difficult for the U.S. to be competitive in NDM. The U.S. is only a marginal producer of WMP.

This whole scenario could be turned on its head, however, by the World Trade Organization (WTO). The December 3, 2001 decision by the WTO's Appellate overturning three previous case decisions outlawing Canada's system of special milk pricing classes could open the door for 2 tier milk pricing - in effect a stable, administered, "high" domestic price and a fluctuating export price determined by international market conditions.

Confirmation of this decision by a WTO compliance hearing beginning in 2002 could re-ignite French and Danish proposals for two tier pricing and encourage the U.S. to follow suit.

In this worst case scenario, the gains achieved in the Uruguay Round on placing disciplines on the subsidization of dairy trade could be largely negated. Two-tier pricing would allow "unsubsidised" exports to exceed volume commitments.

Globally more binds respective dairy sectors than divide because of increased concentration of supply, branding, distribution and retailing creating a wave of new challenges the whole supply chain must deal with. These challenges provide opportunities to boost the long term viability of the family owned and operated dairy farm provided sensible reform plans are put in place to enable the sector to compete with the growing competitive threat of substitute products.

Historical trends

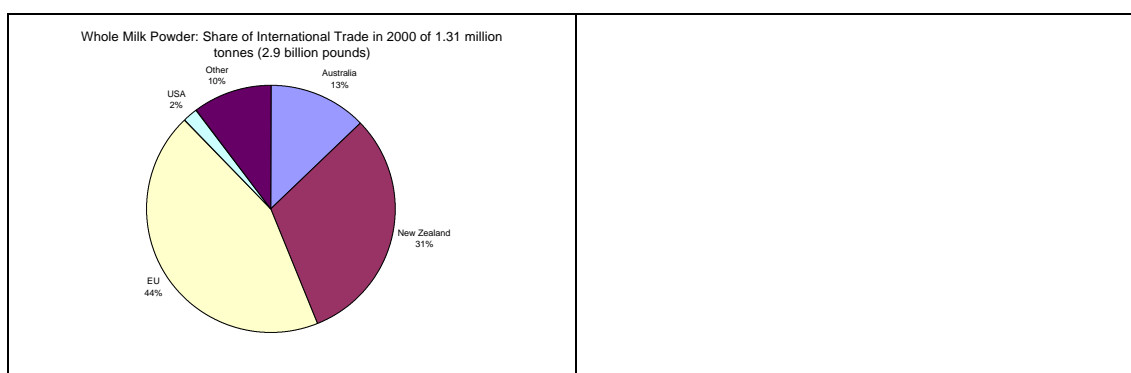
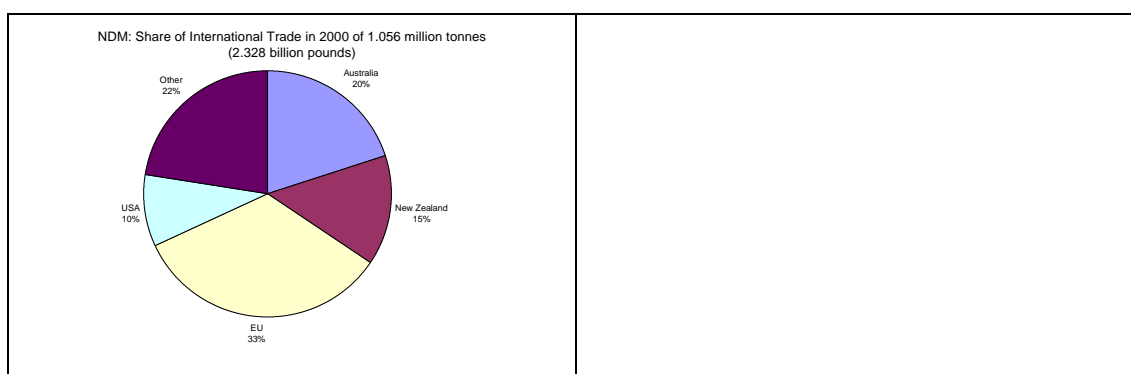
Supply trends - the growing dominance of Oceania between 1990 and 2000⁴

While the EU, New Zealand and Australia have been the largest suppliers of milk powder their respective shares have undergone a major transformation. The U.S. and Argentina have also been major exporters of NDM and WMP respectively in the period 1990 to 2000.

NDM trade has shown considerable fluctuation in annual volumes. Trade over the period 1990 to 2000 has ranged between 731,300 tonnes and 1,056,673 tonnes. The EU's role as supplier of last resort, given its huge structural surplus is highlighted in 1995 and 2000 - years when strong demand exceeded the capacity of non-EU origin exporters to service. EU exports totaled 375,500 tonnes and 352,871 tonnes respectively or over double and 60 per cent higher than the next largest supplying nations.

The EU's share of world WMP has gradually been whittled away over the period from 63 per cent (495,540 tonnes) in 1990 to 44 per cent (566,560 tonnes) in 2000. This drop in share reflects expanding world trade not a decline in EU origin volume.

The big three exporters (EU, Australia and New Zealand) largely maintained their collective share of trade; dropping from 92 per cent in 1990 to 88 per cent in 2000 as a result of the emergence of Argentina as a major exporter to its neighbor Brazil.



Pricing - historical volatility

⁴ Source is ADC data.

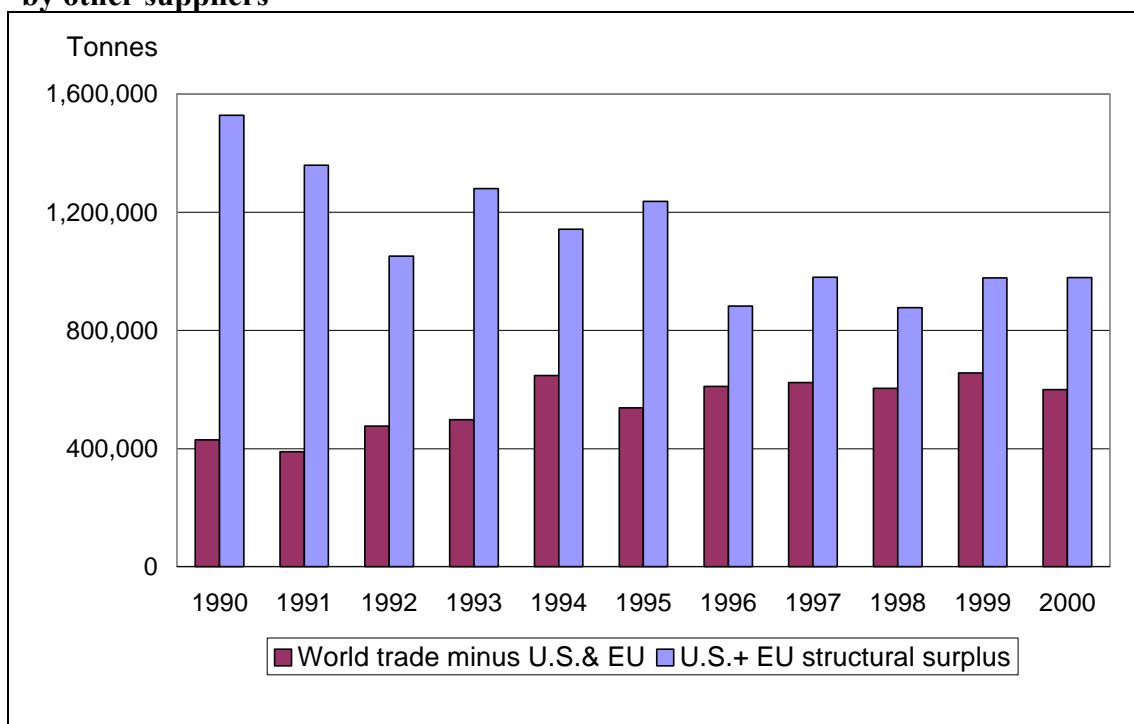
As the accompanying charts show commodity price volatility is a fact of life for milk powder trade since 1990. The key short-term influences on pricing; namely respective EU wholesale price and export subsidy and exchange rate movements of key EU member state currencies against the dollar have resulted in considerable fluctuations in their fob pricing. Adding to the mix was growing supply availability from Oceania, large but fluctuating availability from the U.S. and CEEC and newer entrants such as Argentina.

While Oceania supply availability in response to commercial signals been relatively stable for NDM but growing rapidly for WMP. the same pattern has not emerged in the EU or U.S.

Price support backed up by public stockpiling for NDM in both the EU and U.S. plus other subsidised disposal schemes (either export or internal) does not provide sufficient commercial incentive for processors to alter product mix to meet commercial demand for dairy ingredients.

The combined structural surplus in the US and EU (stockpiles plus subsidised sales) averaged over the period 1990 to 2000 was more than double the exports by other nations⁵.

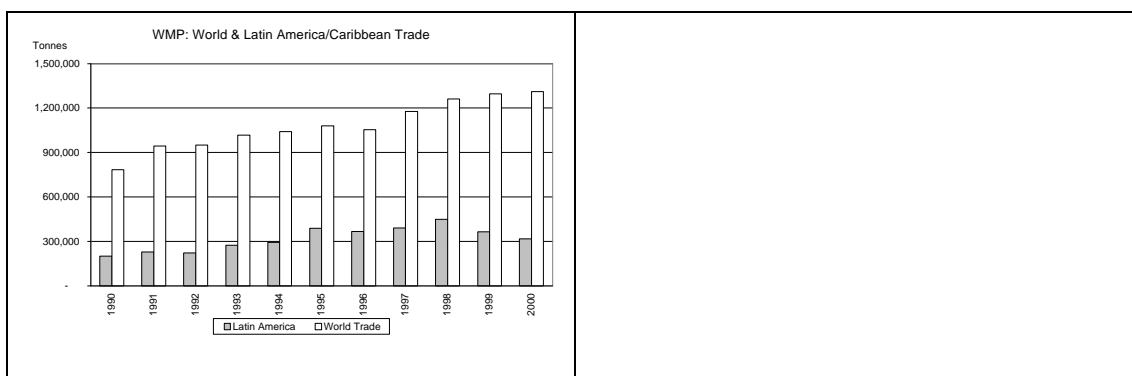
U.S. and EU structural surplus of NDM and comparison with aggregate exports by other suppliers



Demand - Historical influences

Demand for NDM and WMP are influenced by largely different variables. WMP has been the engine of growth for world dairy trade since 1990 while NDM volumes have fluctuated considerably

⁵ The respective figures were 1,117,442 tonnes (EU + U.S.) and 551,627 tonnes. The structural surplus was defined as net DEIP plus CCC sales (U.S.) and subsidized exports plus calf feed sales plus net sales to the public stockpile (EU).



SMP trade is price sensitive. The very high fob prices in the first half of 1996 and 2000 resulted in a demand back lashes.⁶

When NDM prices are high ingredient end-users seek to substitute whey or vegetable protein where technically feasible as the full passing on of higher input costs to consumers may result in reduced purchases of the finished good. This can lead to changes in ingredient formulations to introduce cheaper substitutes. Once changed the full effect is difficult to reverse. Ingredient users also destock and/or delay contract shipments when consumer demand falls.

Substitutability however is tempered by technical factors and product integrity considerations, such as functionality taste.

WMP

Demand for WMP is more trade resilient than SMP.

WMP has been the most consistent growth performer among the major product groups because of its versatility and importance as an ingredient in growing retail markets for nutritional foods ranging from infant formulas to senior citizen age target groups. Trade in WMP has averaged 5.3 per cent per annum growth (or slightly under 50,000 tonnes per annum) between 1990 and 2000 from 785,418 tonnes to an estimated 1.31 million tonnes.

Other favourable factors spurring WMP trade growth are;

- New retail products regularly entering the market.
- Global spread of trade makes WMP more immune than the other product groups to sudden, large falls in import demand in key countries/regions.
- Emergence of an important new market in China. Import volumes have climbed from 3,352 tonnes in 1995 to 50,891 tonnes in 2000.

Importers perspective

From an importers perspective the following charts look at developments in the market place from a demand perspective; specifically the cost in local currency terms of importer dairy ingredients.

⁶ Fob or contract prices may lag spot prices, which peaked in 1995 and 2000 by as much as six months because of the seasonality of Australian production. In other words contracts for delivery of spring flush (October/November) production may be agreed as early as mid year.

Two Southeast Asian example are used - Philippines for NDM and Malaysia for WMP. Reasons are;

- Both are major import markets in Australia's key export region of Southeast and East Asia
- There are no quantitative restrictions on imports i.e. no quotas, and
- The duty for bulk NDM in the Philippines is three per cent and in Malaysia for WMP zero.

In other words access is commercially driven.

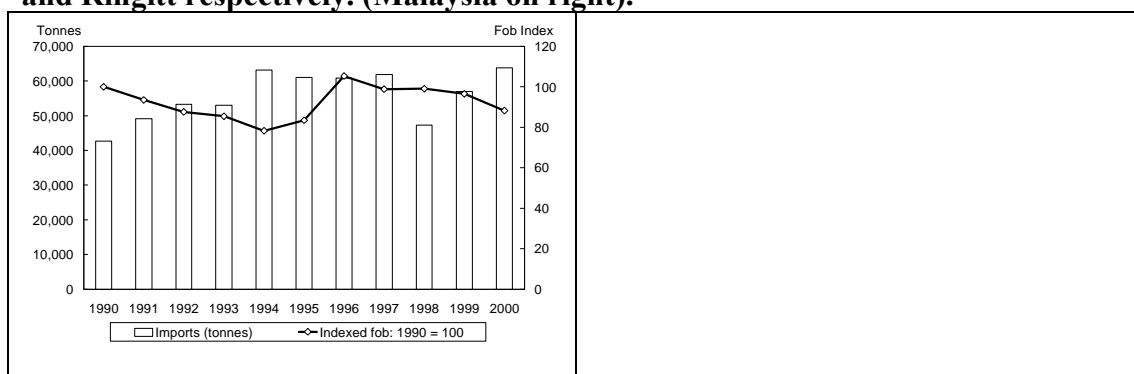
Philippines NDM: With the exception of 1995 there has been a general downward trend in the deflated cost of dairy imports. In local currency terms the import price per tonne of NDM in 2000 was 60 per cent of the price in 1990.

This has contributed to the recovery of import volumes after 1996 despite relatively sluggish economic growth including the one-off effect in 1998 of a sudden meltdown in the value of the Peso against the dollar.

Malaysia WMP: The deflated price decline was not as pronounced for WMP as NDM in the period 1990 to 2000. The deflated price in 2000 was only 12 per cent lower than 1990. This largely reflects a substantially lower inflation rate more than offsetting a less volatile currency against the dollar since 1997 - when compared with the Philippines.

However, trade volumes apart from a very sharp decline in 1998 have been relatively stable since 1992 - fluctuating within a 10,000 tonne band.

Deflated fob price of NDM (Philippines) and WMP (Malaysia) imports in Pesos and Ringitt respectively. (Malaysia on right).



Domestic dairy policies - their impact on world trade

Agriculture policy developments, particularly in the world's largest cow's milk producing and consuming regions; namely EU and U.S. can have a major influence on the global competitive environment and trade flows.

EU dairy reforms under Agenda 2000 will lower the support price of butter and NDM by a cumulative 15 per cent each effective by 1 April 2007. While the effective butter

support price of Euros 2,511/tonne⁷ will remain substantially above the world price, the NDM support price of Euros 1,747/tonne may be more influential than the U.S. support rate in setting a ceiling price for international trade.

The process of eastern enlargement of the EU has precipitated policy decisions favouring trade with candidate nations. Agriculture trade agreements with candidate nations were counted against Uruguay Round commitments. This "exclusive" arrangement, particularly for NDM could have reduced export opportunities for countries such as Australia because the in-quota volume for third countries was lowered. The "balkanization" of trade was further deepened by the coming into effect of zero-for-zero trade agreements with candidate countries in 2000-01 i.e. zero tariffs on both dairy imports and exports up to agreed levels with built in annual increments.

CEEC dairy product access to the EU under the Zero-for-Zero (or double profit) trade agreements

EU Zero-for-Zero Dairy Trade Agreements with Central and Eastern European Countries													
Tonnes													
Start date is 1 July 2000													
	Milk Powder			Butter			Cheese			Yogurt			
	Old Quota	New Quota	Increase	Old Quota	New Quota	Increase	Old Quota	New Quota	Increase	Old Quota	New Quota	Increase	
Czech Republic	2,875	2,875	0	1,250	1,250	0	2,000	5,100	3,100	765			
Slovak Republic	1,500	1,500	0	760	760	0	1,750	2,200	450	330			
Hungary	375	375	0	40		0	2,700	3,500	800	350			
Romania							1,875	2,000	125	200			
Bulgaria							5,500	6,500	1,000	300			
Estonia	3,760	10,000	6,240	3,000	1,875	3,000	1,125	800	1,000	2,700	1,700	810	300
Latvia	3,376	4,260	884	400	1,125	1,875	750	190	1,500	3,000	1,500	300	
Lithuania	4,675	5,300	625	500	1,600	1,760	160	175	1,750	6,000	4,250	600	
Slovenia	1,300	1,300	0					390	390	0	0	650	650
Totals	23,111	35,610	12,499	4,940	8,360	11,645	3,285	1,765	21,965	36,390	14,425	4,455	950

Access for an initial volume of 500 tonnes of cream (previously zero tonnes) with an annual increment of 150 tonnes was also agreed.

Collectively the zero-for zero granted an additional commercial advantage because the in-quota tariff rate for third country suppliers was not altered. In NDM's case the Uruguay Round in-quota tariff rate was a hefty Euros 475 per tonne.

The 2002 farm bill could also alter world dairy patterns, though more indirectly through its influence on the U.S. negotiating position in the WTO Round. The larger the benefits for individual agricultural sectors the greater the perceived commercial incentive to retain the status quo by minimizing market access concessions and programmed cuts to domestic support measures in both the amber box (production distorting) and green box (supposedly non-production distorting).

A five-year farm bill would probably expire within two years of the Doha Round implementation period but a ten-year version would pose major domestic and policy challenges if additional substantive disciplines were imposed on the three pillars of support⁸.

These policy developments are or could potentially throw the burden of adjustment onto non-subsidising exporters who depend on sales onto the world market for their prosperity and future growth. Additionally they would hamper the ability of

⁷ The effective butter support price is 90 per cent of the full support rate. The reason is the EU Commission will only purchase butter for stockpiling at 90 per cent of the full support price.

⁸ The House version of the 2002 farm bill is slated to run for ten years.

developing countries to foster agricultural development, crucial to boost rural economic activity and prosperity.

The Outlook

The outlook analysis reviews likely major influences on milk powder prices and trade flows in the period up to end 2006.

"Generic" influences on trade flows

The Balkanization of World Dairy Trade?

While a target date for conclusion of the Doha Round has been set for early 2005 this is highly ambitious considering the Uruguay Round took nine years between opening and implementation i.e. 1986 to 1995. Additionally Doha Round negotiations are likely to be more involved because of the much more active participation of developing countries and new areas of negotiation on non-trade concerns. Article 20 of the Uruguay Round Agreement on Agriculture says the negotiations have to take non-trade concerns into account. They include food security, the environment, structural adjustment, rural development, poverty alleviation and possibly other developed country concerns such as animal welfare and labour.

Other important areas of negotiation apart from the built on agriculture and services are implementation related issues arising from the Uruguay Round, particularly access for textiles and the so called "Singapore" issues of investment, competition policy, transparency in government procurement and trade facilitation.

Developing countries have also gained the support of developed economies to provide capacity building and technical assistance programs to enable their respective officials to more fully understand and thereby participate more effectively in the intricacies of multilateral trade negotiations post Doha.

In the intervening period the plethora of the bilateral and regional trade agreements, both current and under negotiation threatens to balkanize (or segment) world dairy trade.

The three largest trading blocs,

- NAFTA
- EU, and
- Mercosur

Preferentially treat dairy trade between member nations.

For example NAFTA will remove all dairy product quotas and zero rate tariff duties between the U.S. and Mexico by end 2008.

The candidate countries in Central and Eastern Europe (CEEC) for EU membership have zero for zero dairy trade agreements with the EU.

Uruguay and Argentine dairy sectors have both benefited commercially from the existence of a common external tariff on non-Mercosur dairy imports into South America's largest importing market - Brazil.

The further growth of regional trade agreements for example EU-Mercosur and Free Trade Area of Americas (FTAA) contain the seed of further advantaging those inside the "tent" but at the same time reducing potential market outlets for those processors with a global clientele, for example Australia.

Trade disputes

The growth in dairy trade disputes including non-tariff barriers to trade is further stifling the gradual evolution of a global dairy market - an essential development of dairy is to compete successfully on a long term basis in the food and non-food ingredient sectors.

Prominent examples are the settlement of the Brazilian anti-dumping case on imports of milk powders originating from fellow Mercosur members (Argentina and Uruguay)⁹ in February 2000 and bills before Congress to impose tariff rate quotas on imports of milk proteins i.e. milk protein concentrate, casein and caseinates.

The anti-dumping agreement established a minimum price for Argentine and Uruguayan origin NDM and WMP of \$1,900/tonne fob. These two countries were the principal supply sources in the second half of the 1990s. While the sharp decline in internationally traded milk powder prices in the last quarter of 2001 made this minimum price temporarily "redundant" it has altered trade flows.

The non-tariff barrier to trade effectively diverts exports from these nations to other markets in Latin America and Asia and North Africa - with attendant pressure on prices. Brazil was the world's largest importer of WMP, largely sourced from Argentina, in 1999 and 2000.

The bills before Congress would impose tariff rate quotas on the import of milk protein concentrate and casein equal to 58 per cent and 43 per cent respectively of the average level of imports during the Uruguay Round implementation period 1995 to 2000.

If made law these TRQ's would have major repercussions for international trade in milk proteins as an alternative market or import markets the size of the U.S. as not available. Processors would probably convert, in the short term, milk proteins into NDM, the most likely alternative product in the short term given the absence of alternative markets for MPC's and casein.

The volume of displaced milk protein would be sufficient to make approximately 240,000 tonnes of NDM - equal to 25 per cent of world trade¹⁰. A volume of this magnitude would send fob prices into a tailspin even if a demand response were elicited.

⁹ *Milk powder imports origination from the EU and New Zealand were also judged to have been "dumped" in the Brazilian marketplace. Subsequent official discussions largely resolved the issue.*

¹⁰ *The calculation is based on the difference between the average volume of mpc imports in the six-year period 1995 to 2000 and the proposed tariff rate quota (i.e. 27,507 tonnes minus 15,818 tonnes). Similarly casein, caseinate and mpc 90% imports averaged 126,419 tonnes while the proposed TRQ is 54,051 tonnes. Assuming an average milk protein percentage of 28-29 per cent, MPC of 56 per cent (i.e. double) and casein et al. al. of 90 per cent (approximately treble) the combined TRQ displaces an import volume of 84,057 tonnes.*

Domestic producer pressure for tariff rate quotas beg the question of foregone market opportunities in terms of the domestic processors developing value added dairy ingredients. Domestic processors currently do not have the infrastructure to commercially make milk protein concentrates or casein and with a price support system encouraging the drying of milk proteins into NDM, the imposition of TRQ's may simply forfeit the market to non-dairy proteins such as soy and wheat.

With world NDM trade largely dictated by price and limited long-term growth potential under existing access arrangements the impact is likely to be increase price pressures - even if demand in all likelihood picked up.

A key non-tariff barrier to trade is labeling requirements. The cost of changing packaging labeling to country of import language may only be the top of the iceberg. Delays in Government approval of import labeling may frustrate import access, for example approval of Portuguese language labeling for Brazilian market access.

In summary the growth of regional trade agreements and trade disputes cannot be viewed in isolation. While trade diversion may lead to lower prices and spur demand the returns to exporters are likely to be reduced. They also can create problems for subsidising exporters such as those in Europe and North America who may have to boost subsidies to be competitive - thereby further undermining market sentiment and increasing the cost to the tax payer. Trade disputes can reinforce a downward spiral in the market for milk powders or hinder upward movement.

Food Aid

Food aid has been used as a means of disposing of structural surpluses in both the U.S. and EU.

The last major dairy food aid parcel ex EU was 50,000 tonnes of NDM donated to Russia in fiscal year 2000 (mid October 1999 to mid October 2000). This coincided with an U.S. origin food and parcel including 30,000 tonnes of NDM delivered in fiscal 99 (i.e. 1 October 1999 to 30 September 2000).

Food aid parcels, however, do not come without side effects and despite their humanitarian intent can, except in the most pressing of human tragedy cases lead to the following commercial impacts either in isolation or intertwined;

- Displacing domestic production leading to possible reductions in factory throughput and lower raw milk demand.
 - Undermining dairy product prices if indigenous milk is diverted in higher volumes than planned to other product lines.
 - Possible direct substitution of NDM /butteroil for other dairy ingredients, particularly WMP in the production process.
 - Displacing commercial trade, particularly over the winter period (October to April) when Russia is a milk deficit nation i.e. damaging trading links between Russian importers and manufacturers/traders in exporting countries, and
- ⇒ In turn reducing traders' willingness to take risks to build a long-term business relationship.

- Displacement of domestic product onto the export market or rebagging and re-export of food aid where it competes with Australian origin NDM either directly or indirectly in SE Asian nations.

EU industry contacts, however, indicated at the time it was more likely displaced indigenous milk proteins will be processed into casein for export rather than NDM. The largest market for casein is the U.S. Entry into the U.S. completes a self-defeating circle.

The Doha Round - an opportunity?

The Uruguay Round Agreement on Agriculture (URAA) was akin to building the body of a car. The Doha Round offers the opportunity for providing real horsepower as a multilateral round offers the most promising avenue for achieving substantive liberalisation of world dairy trade.

The November 2001 WTO Ministerial declaration containing the words committing members to "comprehensive negotiations aimed at substantial improvement in market access, reductions of, with a view to phasing out, all forms of export subsidies; and substantial reductions in trade distorting domestic support" has set the scene for achieving greater transparency and less distortion of agriculture trade.

The Doha ministerial text goes on to state special and differential treatment of developing countries shall be an integral part of the final agreement. In respect of dairy this could benefit India and milk surplus nations in South America.

OECD calculations for 2000 show dairy is the third most subsidised rural industry globally behind rice and sugar (slightly) and this support is heavily present in the two most economically powerful, culturally influential and largest dairy consuming regions - namely the U.S. and EU.

A number of major hurdles, however, have to be negotiated before a more global dairy sector can emerge. They include:

- Meaningful access. For example bilateral trade agreements may continue to offer more favourable access than a multilateral agreement if in-quota tariff rates under the latter are not reduced to zero and substantially expanded.
- The premiums for access to supported markets in Western Europe and North America may be creamed by importers through either perpetuation of existing access arrangements or imposition of new arrangements.

Other factors include broad-based access. For example the EU's Uruguay Round scheduled did not open market access for WMP - despite the EU being the world's largest exporter. Secondly access should not be conditional on meeting a very tightly defined specification; for example the EU quota on pizza style cheeses.

Transparency is also a key outcome. If export subsidies are phased to zero measures need to be put in place to ensure support is not transferred from the amber (production distorting) to the green (production "neutral") box. The EU's pilot program couched in terms of reducing bureaucratic waste, of making direct, capped payments to small scale beef farmers disguises the potential for direct payments to be a income substitute for phased out export subsidies.

Maintaining producer incomes at (an increasing) arms length from the market place is not a desired outcome from an agricultural process or consumer perspective because it stifles innovation and productivity gains - crucial to the long-term prosperity of the any industry sector.

A likely scenario of expanded income support is overproduction, which keeps the wholesale price low and the circle is then completed by farmer agitation for more government assistance. Low wholesale prices may also disadvantage the small to medium sized farmer through their inability to generate economies of scale to reduce the average and marginal cost of milk production

Direct payments are likely to be locked into higher land values¹¹ and consolidation of land ownership as the absence of limits on support payments favors the larger farmers¹².

These outcomes either singly or combined would make it that much more difficult to achieve the cherished ideal of young people entering agriculture to take up the reins from an aging farmer population.

But who wants reform?

The benefits of reform, however, might not flow directly in the medium term to existing farmers in the two most economically powerful and trade influential nations - the U.S. and EU.

Phasing down of Government support levels may even require the largest and purportedly most efficient farmers in these regions to substantially restructure as their "efficiency" is based on continuing Government largesse and not globally benchmarked.

The global gains from market oriented reform are large. Elimination of subsidies, reductions in agriculture access barriers and reform of domestic supports will spur economic development and trade in developing nations. Increasing incomes and trade will boost demand for imported goods including value added processed food and encourage investment to sustain further economic growth.

In summary a trade-off is involved. Farmers protected by Government support policies need to adopt a risk taking approach by supporting phased reductions in assistance to achieve the goal of becoming more efficient and thereby either gaining or building a larger stake in global dairy trade growth¹³. Secondly the price attractiveness of dairy products relative to substitutes in an increasingly competitive global food market place needs to be continuously enhance.

¹¹ *USDA estimates land values were inflated by 20 per cent, even higher in the Midwest because of support payments.*

¹² *The Environmental Working Group estimated the largest 10 per cent of farmers attracted 67 per cent of total Government subsidies in the period 1996 to 2000.*

¹³ *Reform in the author's view should be phased as happened in Australia. A cold turkey approach such as that adopted in the 1996 FAIR act of abolishing the dairy support price program at the end of CY99 (to be succeeded by a recourse loan program) is not the way to either approach or gather farmer and processor support for genuine market oriented reform.*

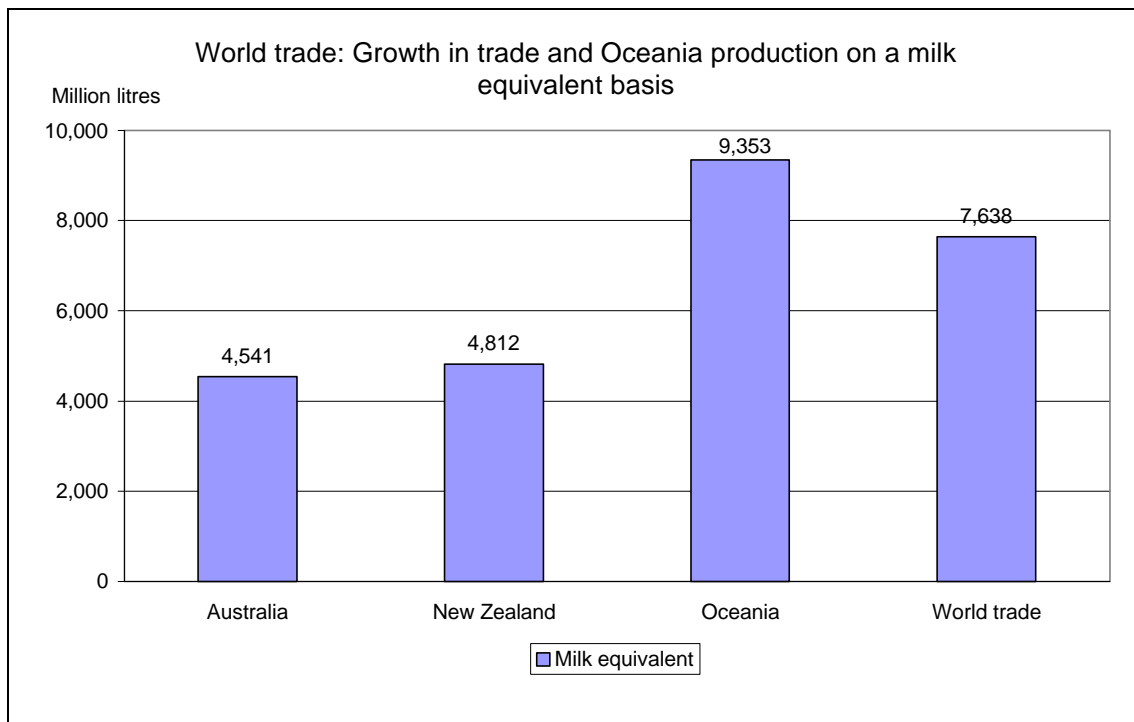
Supply outlook - key influences on sourcing

Supply - the incentive to export!

The three nations with the greatest incentive to be competitive suppliers are New Zealand, Australia and Uruguay.

On a milk equivalent basis New Zealand exports greater than 90 per cent of production and both Australia and Uruguay in excess of 50 per cent. With mature domestic markets in all three countries, growing production is largely export dedicated. This effectively ties the prosperity of respective dairy sectors to the fortunes of the world market and all three do not subsidize exports. Respective dairy sectors have been on an expansionary path since 1990.

However, milk production growth in Oceania has been cumulatively expanding at a faster volume rate than the growth in world trade - hence the emergence of Oceania as the world's largest source of dairy products. Oceania's share of world trade on a milk equivalent basis increased from an estimated 25 per cent in 1990 to 47 per cent in 2000. Oceania surpassed the EU and the principal supply source in 1997.



The estimated growth in Oceania export availability on a liquid milk equivalent basis of 9.353 billion litres was 22 per cent higher than the total growth of world trade of 7.638 billion litres over the period 1990 to 2000. Given mature domestic markets and slow population growth most of this increased milk production was exported.

For these three nations a favourable trade liberalising outcome, for example phasing out of export subsidies and substantive increases in market access at in-quota tariff rates of zero are vital to growth and prosperity of respective dairy sectors.

Other nations with a competitive advantage in milk production include Argentina, Brazil, India and possibly Columbia and members of the Former Soviet Union particularly the Ukraine - though the latter has the specter of Chernobyl possibly clouding its export potential. While domestic markets will remain their respective

priorities there is an emerging capability to expand exports. Argentina has already trodden this path being the largest supplier to the Brazilian market. India has been an ad-hoc exporter in recent years while Brazil generated an exportable surplus of NDM and butter for the first time in 2001.

Both India and Brazil can produce milk at a similar cost to Oceania¹⁴. The sharp devaluation of the Argentine Peso in early 2002 will have a major beneficial impact upon their competitiveness once restructuring including repayment of U.S. dollar debts is brought under control within the next three to four years.

The EU and U.S. are also expanding their non-subsidised exports particularly in value added products such as cheese, whey protein concentrates and isolates and products containing dairy ingredients such as ice cream.

While the domestic market will remain very much their number one priority;

- Ongoing structural surpluses
- Competitive advantages in value added processing including for re export because of a highly trained workforce
- Regional trade agreements offering preferential access
- The ability to source "feedstock" i.e. high quality dairy ingredients from a wide range of domestic and international sources. Consumers react adversely to the colour or flavour of imported product sourced from different feeding regimes. This could result in a blending of indigenous and imported ingredients improving quality, texture and flavour.
- The inability of supply from Oceania, Mercosur, India and possibly other nations to fully meet growing world trade

Will ensure both the U.S. and EU play an active role in dairy trade even if export subsidies are phased out and market access is substantively liberalized.

Both the EU and U.S. also have a number of other competitive advantages largely hinging around respective economic strengths and traditions as large dairy consumers. While not all are shared by both nations they include:

- A very positive attitude to risk taking, the key entrepreneurial ingredient encouraging innovation.
- A very strong support base for encouraging innovation including state funded agriculture universities, the dairy check-off program (U.S.) and processors funding university research and proprietary R&D.
- A technological lead in terms of ground breaking research and successful commercial application

¹⁴ The International Farm Comparison Network presented a report on the competitiveness of milk production worldwide at the International Dairy Federation November 2001 conference in New Zealand. The results cover 2000 and costs were converted into U.S. cents per litre for comparative purposes. Of the results presented for six of the twenty countries (U.S., New Zealand, Germany, Poland, Argentina and India) where a "typical" dairy farm was analysed the most profitable was a 22 herd size operation in India. The lowest costs of milk production were recorded in India and New Zealand. Larger herds in the U.S. and to a lesser extent the EU was more profitable than smaller herds. Both the EU and New Zealand costs of production were favorably lowered by a falling Euro and Kiwi dollar against the greenback in 2000.

- Massive economies able to generate high amounts of money for funding R&D both via Government and head quartering of the world's largest companies.
- Hugely efficient plants. Countries such as Australia have a competitive advantage in raw milk cost but the U.S. and EU with seasonally flat milk production profiles are leaders in efficiently processing milk into finished products. These economies of scale can reduce the unit costs of cutting and packaging operations. These highly efficient plants also have the volume throughput to be flexible in terms of responding quickly to sizeable customer orders.
- The attraction of market size encouraging investment and risk taking build brand leadership in both domestic and international markets with the potential for higher returns.
- Proximity to the customer and the market place creating an intuitive understanding of, and the ability to react quickly to market trends. These companies would be in a favourable position to develop new products to support market demands for quick delivery times and better able to respond to evolving quality requirements. Domestic manufacturers should have a clearer and greater understanding of market dynamics and “intuitively knowing” the market.
- Response times and transport costs for local products are lower because of closeness to the customer. Reliability is another key advantage because of greater ability to deliver at an exact time rather than dependence on shipping schedules.
- Ingredient users may be reluctant to change recipes because of the differing taste, colour and texture of imported product.
- Lower administration costs are likely because sea freight and Customs do not have to be arranged.
- Cultural factors, including the benefit of long term relationships are an important part of generating sales. Understanding the local business culture and the way they do business and avoiding potential pitfalls can make the difference between a sale or not, irrespective of quality, price and functionality issues.
- The seasonality of production may not a constraint on milk supply as in the pasture based exporting nations making it easier for indigenous suppliers to guarantee year round volumes.
- The European Union’s tradition and quality of specialty cheeses will largely insulate their domestic market from import competition.

In conclusion these factors offer a competitive edge to indigenous manufacturers on the domestic market and can be leveraged to gain a competitive advantage in export markets.

Other competitive suppliers include Chile, Columbia, Canada and CEEC nations though for different reasons. Chile is a seasonal supplier entering the international market to quit spring flush surpluses.

Columbia is an emerging exporter with duty free access to a major South American market, the bordering Venezuela and designs to supply other Latin American markets, principally Mexico. Columbia also possesses a capacity to expand dairying operations.

Canada is able to compete through subsidies. However, if a WTO Compliance Panel review beginning in the first quarter of 2002 decides their two tier milk pricing

system¹⁵ is WTO legal it could open the door for substantially greater exports from Canada and results in copy cat actions by other nations with structural milk surpluses.

In summary supply competition is likely to intensify from emerging regions over the next ten years as a result of investments in low cost milk producing regions and increasing consolidation in farm supply and processing.

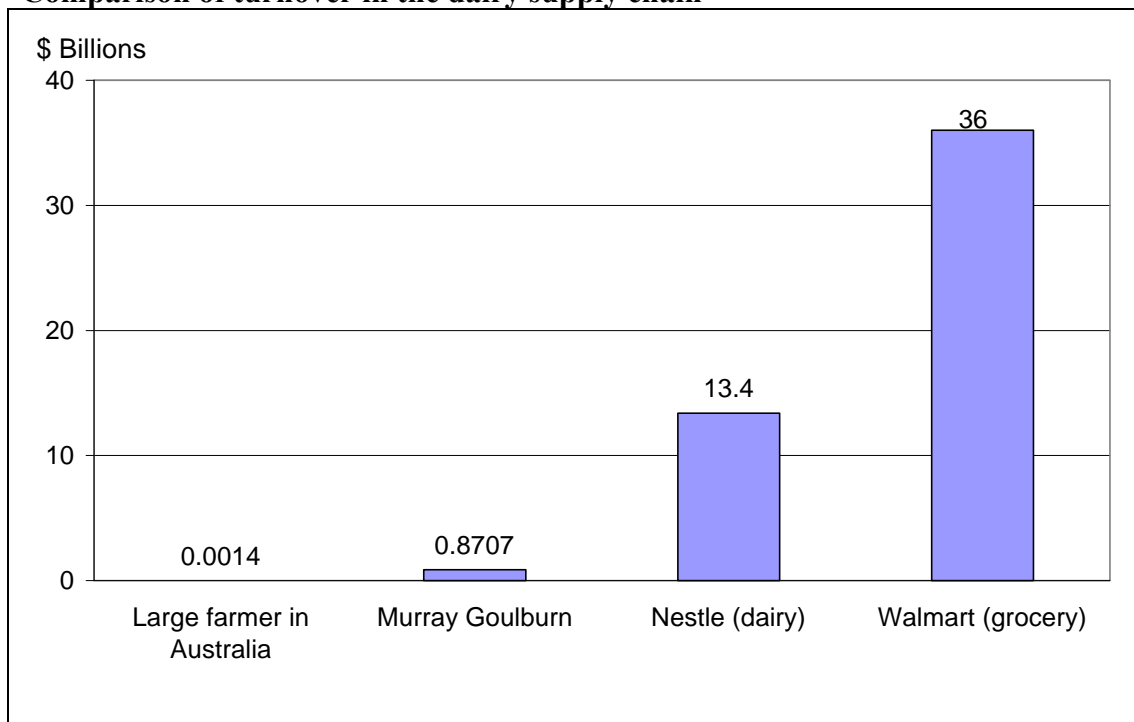
Concentration of supply - Farm to Plate

The much publicized emergence of Fonterra and a secession of announcements on supply partnerships; two of the most prominent being with Bonlac Foods¹⁶ in Australia and with Dairy America¹⁷ are signposts to further concentration in the industry in coming years.

Looking, however, at purely dairy ingredient exporters, such as Australia's largest co-operative Murray Goulburn, their size is substantially less than a value added, retail focused food company such as Nestle. Murray Goulburn's turnover in financial year 2000-01 was approximately seven per cent of Nestle's dairy division in 2000.

Yet Murray Goulburn accounted for approximately six per cent of world dairy trade on a milk equivalent basis in 2000. In turn Nestle's total turnover in 2000 of close to \$50 billion was approximately a quarter of Wal-Mart's total turnover.

Comparison of turnover in the dairy supply chain



Is the current chain structure tenable?

¹⁵ The domestic support price is substantially higher than the world market price.

¹⁶ Fonterra has a 25 per cent stake in Bonlac Foods, Australia's second largest milk processor.

¹⁷ The August 16, 2001 arrangement between NZ Milk Products U.S. and Dairy America will result in the latter's NDM holdings being marketed worldwide by the earlier. Dairy America handles NDM for its members; Agri-Mark, California Dairy Industries, Land O'Lakes, Maryland & Virginia Milk Producers Association, O-AT-KA Milk Producers and United Dairywomen of Arizona.

Highly unlikely as consolidation at the farm, dairy ingredient and food branding processor levels and at retail gathers pace.

According to Rabobank International¹⁸ during the period 1 January 1998 to 30 April 2000 there have been a total of 490 mergers and acquisitions. The merger activity ranges from very small to significant processor consolidation. The report goes on further to state the top 20 dairy companies accounted for a combined turnover of \$100.2 billion in 2000, sixty per cent more than the top 20 in 1992. The five largest companies accounted for 41 per cent of this turnover.

Farmers will continue to expand production in order to achieve the economies of scale that are needed to keep pace with inflation. In other words on-farm productivity gains are essential to drive down the unit cost of milk production, as returns have historically not kept pace with inflation. Dairy processors unless they can profitably operate in a niche market, will be under increasing pressure to be a single supply base for an increasingly diverse range of value added ingredients and commodity products.

This will further strengthen the consolidation momentum because of the need for increased expenditure on R&D, commercial product development and quality assurance schemes from the farm to plate to guarantee dairy products remain competitive food ingredients. This requires large, ongoing investment in infrastructure and human resources. This is more readily financed through large and growing turnover.

While the milk receival threshold for a processor to be globally competitive in 2002 is probably plus four billion litres annually the threshold to be globally or regionally competitive in ten years time may be in the range of eight to ten billion litres.

It is unlikely all of the ten processors in this group in 2002¹⁹ will be separate identities in ten years time.

Also the nature of an "independent" processor has changed substantially in recent years with some companies shifting out of milk receival and commodity processing into value added, retail-branding companies. Specialized dairy ingredient processors (in some cases one step removed from the market place) have emerged to form a link in the chain between dairy farmers and these brand companies. As key ingredient suppliers they have a large stake in the success of retail branding companies such as Kraft and Nestle because the profitability of each discrete unit involved (from farm to the consumer) is intimately linked to the commercial success of the other. This specialization is expected to continue up and down the farm to plate supply chain. Specialization also breeds co-operation to the ultimate benefit of the consumer and members of the dairy supply chain.

Demand Outlook - Key Influences on Trade Flows

Key demand drivers include;

¹⁸ *Rabobank International Report 'Global Focus Dairy' May 2001, pages 1 & 2.*

¹⁹ Companies with this milk receival threshold in 2002 include Dairy Farmers of America, Fonterra, Arla, Besnier, Campina Melkunie, California Dairy Industries, Land O'Lakes, Friesland, Nordmilch and Murray Goulburn.

- Global and regional macro-economic outlooks and its impact on consumer spending
- Price of oil
- Government actions influencing trade flows
- Exchange rate movements influencing price competitiveness viz. substitutes
- Buyer perceptions on availability, freshness, reliability of supply, food safety etc.
- Competitive behavior by suppliers
- Evolving levels of milk self-sufficiency in major import regions
- Regional trade agreements influencing sourcing decisions
- Demand factors specific to NDM or WMP

Macroeconomic outlook

World economic growth is forecast to stage a modest recovery in 2003 reaching 3.5 per cent after falling below the "recession" benchmark of 2.7 per cent in both 2001 and 2002²⁰.

In the crucial dairy import regions of Southeast Asia, East Asia including Japan, Latin America, Middle East and North Africa economic growth is forecast to range between modest and relatively strong

While food purchases are generally more recession proof than consumer durable expenditure, consumption of dairy products in SE and East Asia is not necessarily a staple part of diets - with exceptions such as sweetened condensed milk.

Expenditure on dairy products for example at food service outlets in times of low or modest economic growth could be reduced as eating out may be viewed as discretionary by middle class clientele.

Forecasts indicate consumer spending will either match or slightly outpace economic growth in key dairy importing regions. Falling dairy commodity prices in dollar terms is likely to result in cheaper ingredient input prices in local currency terms. These lower costs may be passed onto the consumer, depending on targeted profit margins in the supply chain.

Forecast economic growth in key dairy regions; Latin America, Asia and Middle East/North Africa

	2001	2002	2003	2004	2005	2006
Asia excluding Japan	3.1	4.2	5.9	5.9	6.1	6.1
ASEAN	1	2.3	5.2	5	4.9	4.7
Japan	-0.4	-1.5	1.4	1.4	1.5	1.5
Middle East/Nth Africa	2.3	2.4	4.2	3.7	3.7	3.9
Latin America	0.5	1.5	3.7	4.3	4.4	4.2
Mercosur	0.6	1.2	3.9	4.1	4.2	3.9

The price of oil has been an important factor influencing trade volumes as many of the oil exporting nations are also medium to major sized dairy importers. They

²⁰ Sources of economic growth data is HSBC Bank and Economist Intelligence Unit.

include Mexico, Venezuela, Russia, Gulf states, Algeria and Indonesia. Buoyant oil prices as occurred in 2000 and 2001 boost government coffers and economic activity in recipient nations.

With sluggish world economic growth the ability of OPEC to maintain production restraints and price will be tested. OPEC nations typically depend on oil for 90 per cent of their earnings so a protracted downturn in barrel prices below the benchmark of \$18 level places considerable constraints on the ability of major oil exporters to generate solid economic growth²¹.

Under these circumstances dairy import demand from major oil exporting nations is anticipated to be relatively stable.

Trade disputes have the potential to divert business to other markets with consequent price pressures and to lead to changes in processors product mix decisions. A key legislative decision with the ability to adversely affect the milk protein market²² is legislation before Congress to impose tariff rate quotas on casein and MPC. If legislated the diversion of milk protein to other markets and into other products for example NDM could have major price implications. (See page 11 for a fuller discussion).

Canada's Two Tier milk pricing scheme. If the WTO's Appellate Body's decision of December 3, 2001 opens the door for a differentiated domestic and export price it could have major ramifications for international supply/demand balance. A WTO Compliance Panel Board will review this decision in 2002.

Both French and Danish dairy sectors have previously expressed interest in two tier pricing - basically involving a supported and high domestic price backed by tight restrictions on market access and a floating export price determined by international market conditions.

This pricing arrangement is intended to maintain or even expand milk production beyond the current national quotas by facilitating the disposal of the entire structural milk surplus via the world market i.e. potentially reduce budgetary expenditure on internal disposal schemes.

While administratively very difficult to manage, for example how would prevention of "leakage" between export and domestically consumed milk be policed a 2 tier scheme could also engineer a free fall in world prices to possibly break even production costs in Oceania. The EU's structural surplus is sufficiently large that if solely exported, even at rock bottom prices, the world market may not be able to absorb the additional volumes given the growing unsubsidised export presence of Oceania and South American producers.

This would render ineffective the gains made in the Uruguay Round in terms of placing some disciplines on dairy export subsidy practices.

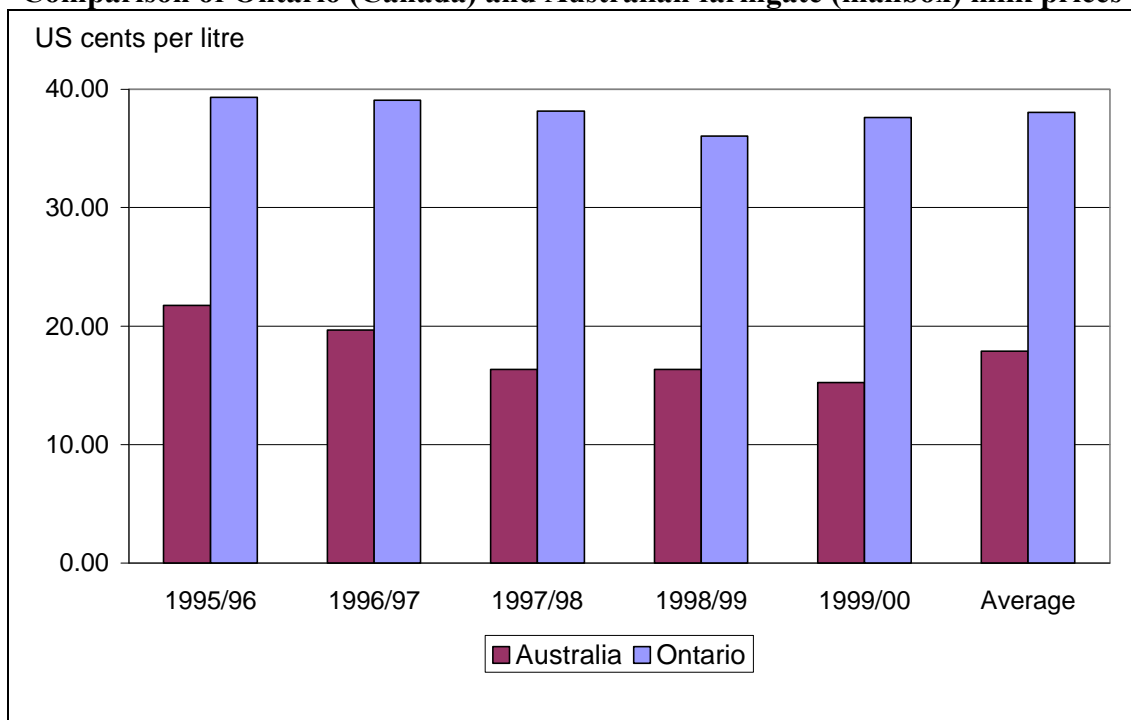
The extent of gap between an administered (supported) domestic price is highlighted by the graph below showing the farmgate return to Australian dairy farmers from

²¹ *The marginal cost of non-OPEC production is around \$18 per barrel. OPEC members include Gulf states, Indonesia, Venezuela, Iran, Iraq and Algeria.*

²² *Milk protein products include NDM, milk protein concentrates, casein and caseinates and other specialized milk powders.*

manufacturing milk compared to net returns to Ontario milk producers for milk marketing's under quota. The gap averaged more than double (38.1 cents versus 17.9 cents) over the period 1995/96 to 1999/00²³.

Comparison of Ontario (Canada) and Australian farmgate (mailbox) milk prices



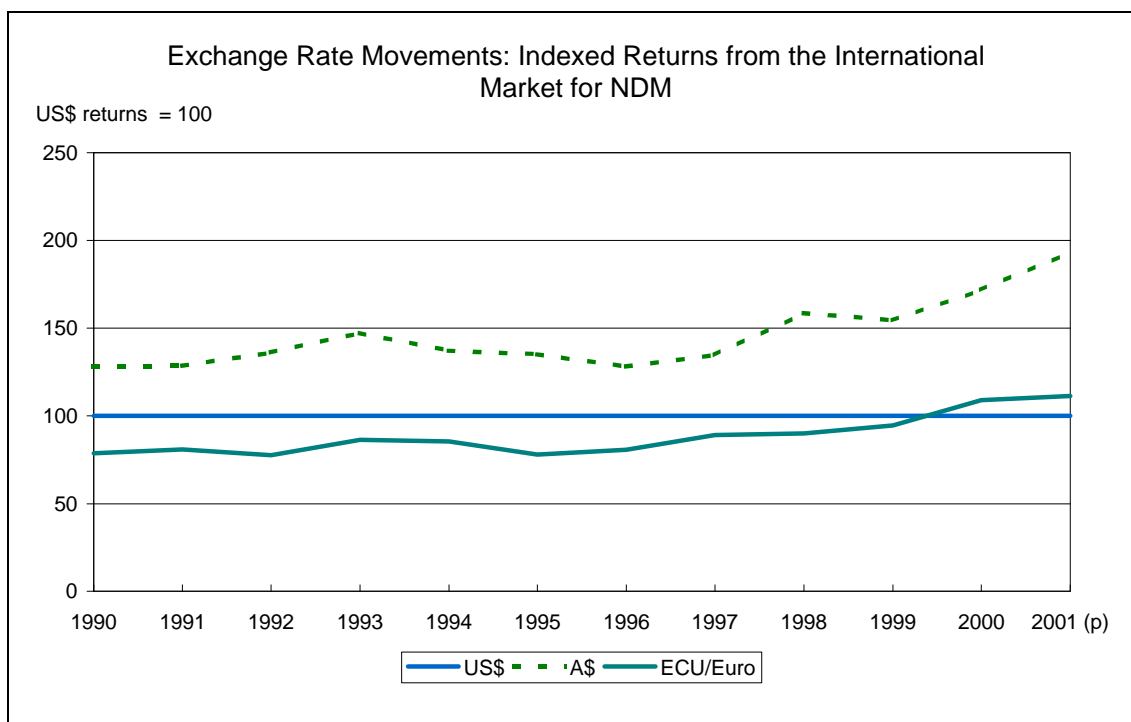
Exchange rate movements can also play a major role in trade flows from an ingredient end-users perspective. The January 2002 decision to break the 1: 1 nexus between the dollar and the Argentine Peso, by floating the latter will have a major beneficial impact on the competitiveness of Argentine origin product. Floating by cutting in half or even more the value of the Peso against the dollar will allow much greater export pricing flexibility for Argentine processors given farmers are paid in the national currency.²⁴

The Australian dollar between 1997 and 2001 averaged a loss of 43 per cent against the dollar. With farmgate prices paid in local currency terms and international trade carried out in dollars this can have a major impact on farm and processor profitability with consequent influences on industry confidence and investment decisions.

Exchange rate movements, however, being unpredictable can also cause the opposite impact over time.

²³ The Australian farmgate price for manufacturing milk has been tied to international fob prices since deregulation began on 1 July 1986. The fluid milk market was price deregulated from 1 July 2000.

²⁴ *Noting this impact will not be instantaneous but likely to evolve over 3 to 4 years. Reasons are the heavy indebtedness of processors in dollars, likelihood of domestic dairy demand slumping, milk production falling for the 4th consecutive year in 2002 and the need for economic and political stability.*



Buyer perceptions are formed over time by a range of issues. The creation of a favourable perception offers a competitive advantage to a supplier. Key issues likely to influence buyer perceptions in the medium term are:

- Environment including a "clean and green" country image. Clean and green refers to the perception in customer minds of the value to be placed upon the origin of the product or ingredients used in it. Places with "high" clean and green images such as Oceania may gain an increasing export advantage so long as the consumer perception is cultivated.
- Food safety. Since the Chernobyl reactor meltdown in 1986 and more recently food safety scares such as BSE, foot and mouth and dioxins buyers have a heightened awareness of the food safety guarantees. More general are concerns over GMO status and chemical residues. Concern over the quality of food is not only a developed country phenomenon^{25, 26}.
- Reliability of supply which can be linked to geographic proximity and export dedication of supplier i.e. is a processors reliance on exports to generate turnover low, medium or high.
- Ability of supplier to expand production. For example production is not regulated by quotas and/or Uruguay Round limits on subsidised export volumes.
- Customer service and degree of (long-term) commitment to the market.
- Security of supply for example not relying on one supplier, though industry consolidation at the processor level is gradually reducing sourcing options.

²⁵ For example in 1999, the Board of Foreign Trade (BOFT) in Taiwan based a total of 118 products originating from Belgium because of the dioxin contamination scare. This included all imports of milk, eggs, dairy and egg based products, animal feed, animal fat, poultry, livestock products, crackers and chocolate. The NZDB's joint venture partner in Taiwan experienced an increase in trade inquiries due to the incident. An increase in trade enquiries was also experienced in Hong Kong during this incident. *Source is New Zealand Ministry for the Environment Report 'Valuing New Zealand's Clean Green Image', page 4-7, 2001.*

²⁶ An October 2001 Australian Government organised "Supermarket to Asia" Study tour of Taiwan and South Korea noted consumer concerns regarding GMO's had risen over the last five years due to media attention. Although the issue is not clearly understood at the consumer level, GMO free status is being used to promote soy and fermented drinking products.

- Regional trade pacts offering a competitive advantage to a processor within the "tent".
- Freshness. Consumers are increasingly seeking "freshness" in consumer products. This is necessitating a shortening of the "farm to plate" time frame to enhance perceived freshness and taste. Freshness can also be linked to clean and green.
- Global alliances for example New Zealand and Nestle in Latin America²⁷ can also play a role by encouraging ingredient end-users who are not part of the arrangement to look for alternative supply sources.
- Quality and consistency of quality of (imported) dairy ingredients are important as buyers take increasing note of the trade off resulting from a "cheap" price and ensuing lower yield and functionality of the end (retail) product. This is favouring purchasing of high quality ingredients even with a price premium attached. Quality and consistency also allows the creation of a distinct flavour profile to enhance consumer acceptance.

To succeed in the export business in the long term it is important to distill in key buyers' minds a favourable perception on the above issues.

Competitive behavior or the ability of suppliers to be regular participants in the market place is also a very important issue. Changes in export subsidies ***particularly by the EU can alter competitiveness and in isolated cases actually lead to exiting from a market until export subsidies and the other short term variables of currency and wholesale price movements adjust favorably for renewed export activity***²⁸. The NDM subsidy was cut to zero from May 2001 to November 2001 as the EU Commission sought to "cool" the domestic market. This Government action is not conducive to long-term export penetration.

²⁷ Nestle, the world's largest group and Fonterra the world's largest exporter of dairy products announced a joint venture on August 30, 2001. The companies are negotiating an alliance to create a number of joint ventures in the Americas. They will cover a range of dairy products including shelf stable as well as chilled refrigerated milk foods and beverages under their respective brands. Infant formula, evaporated and condensed milks, certain specialty products, cheese and butter are not covered by the alliance.

²⁸ Export subsidies are adjusted by the European Union too achieve their prime policy aim of balancing the domestic market, as reflected in stable wholesale prices.

EU export subsidies for NDM and WMP (right hand chart)



The level of milk self sufficiency also plays a role in trade volumes. Japanese milk production is forecast to fall for the fifth consecutive year in fiscal 2001 (ends 31 March 2002) due to a combination of long term problems including the unattractiveness of dairying as a lifestyle and more pressing short-term issues such as the impact of BSE on milk production. Because older cows are not being culled because there is no consumer demand for dairy beef, farmers are not able to replace them with younger cows. This was negatively affecting milk production²⁹.

Regional trade agreements

The growing level of milk self-sufficiency in South America propelled by Argentina, Uruguay, Brazil, Colombia and Chile is and will boost intra-regional dairy trade.

While Mexico is likely to remain a huge import market for milk powders the removal of all barriers to dairy trade with the U.S. under the NAFTA agreement by end 2008 will to promote bilateral rather than multilateral trade in the other dairy product groups. For NDM and WMP Mexico's actual rather than bound WTO duty rate for in-quota imports has been fixed at zero.

Demand factors specific to NDM largely revolve around price competitiveness with substitutes particularly whey proteins. WMP trade may also be influenced by the pricing gap with animal fat substitutes such as vegetable oils - the larger the gap the greater the possibility of "filling" or replacing milkfat with vegetable fat.

In summary trade is likely to be in for a rocky road in the next five years i.e. to end 2006 as developing country economies adjust to the slowdown in developed country growth rates, particularly in the U.S. The likelihood of trade disputes emerging is enhanced if relatively low farmgate milk prices eventuate i.e. if all else fails blame imports. The growth of regional trading blocks fostering dairy trade for those inside

²⁹ Milk self sufficiency, however, can work both ways. A vastly different picture is emerging in Brazil. During the six year period 1995 to 2000 Brazil was the largest dairy-importing nation in South America and one of the largest in the world. However, the situation changed dramatically in 2001 as Brazil emerged as an exporter of butter and NDM. Rapid industry modernization, low cost of production in emerging milk regions in the interior, weak domestic demand and a sharp devaluation of the Rias in the first half of the year making imports less competitive were major reasons. The situation is unlikely to fully reverse in 2002 and subsequent years even if Brazilian domestic demand shows sustained improvement. The sudden "loss" of a import market averaging in excess of two billion litres, milk equivalent per annum in the period 1995 to 2000 or around five per cent to six per cent will have profound effects on trade flows as exporters in Argentina and Uruguay look to other markets in Latin America and further afield. The potential also exists for Brazilian based processors to establish trade strategies for regular exporting.

the "tent" and the status quo since 2001 in WTO trade reforms are further major reasons for global trade inertia.

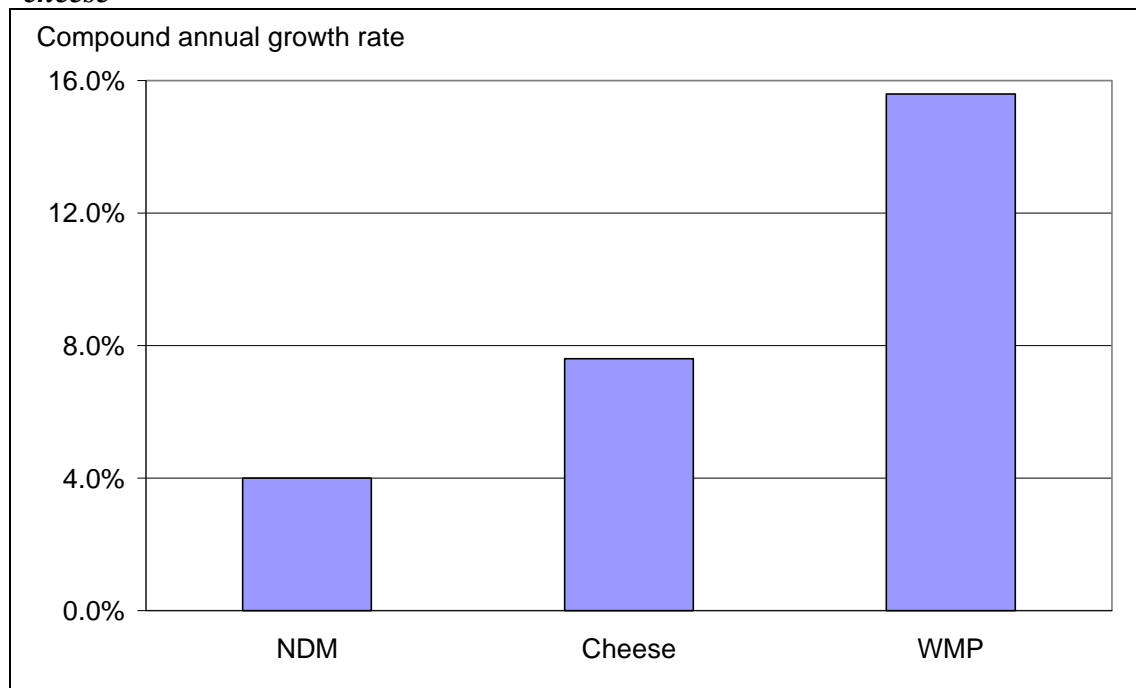
- Despite world dairy trade recording compound growth of 2 per cent per annum between 1990 and 2000 on a milk equivalent basis.

The horns of a dilemma

The Australian dairy sector's prosperity relies solely on its commercial and trade policy acumen. Focusing on the first, the key driving force is returns from the international market. They in turn are the major influence on the price received for domestic sales for other than fluid milk.

Growing world trade since 1990 has largely been concentrated in specialized whole and semi-skimmed milk powders, to a lesser extent cheese and more recently whey protein formulations. This is reflected in Australian production trends with the annual compound growth rate of WMP production between 1990 and 2000 of 15.6 per cent double that of cheese's 7.6 per cent and almost quadruple that of NDM's four per cent. Admittedly WMP started from a much lower volume basis than NDM in 1990.

Compound growth rate in Australian production of NDM, WMP and cheese



With potential returns from butter/NDM³⁰ likely to be restrained by static demand and a lower ceiling price respectively the commercial temptation is to continue favoring WMP and cheese in product mix decisions.

However, with economic growth in key dairy import regions (Latin America, Southeast and East Asia, Middle East and North Africa) likely to range between subdued and modest when compared to historical trends the trade growth outlook is equally modest up to end 2006.

Compounding the problem is the end of the Uruguay Round implementing period for developed countries by mid 2001. The agreed reductions in subsidized export volumes and market opening measure have been fully implemented. No more multilateral concessions will be offered until the Doha Round outcomes are implemented – the earliest being 2006.

This leaves Australian processors who collectively export more than 50 per cent of milk delivered to dairies with a dilemma.

Producing butter/NDM is likely to result in relatively “capped” returns. The three largest cheese importing nations; Japan, U.S. and EU who collectively account for around half of world trade offer limited growth prospects over the next five years. Multilateral access to the U.S. and EU is capped by quotas³¹. Continued import growth

³⁰ Raw milk is jointly processed into either butter/NDM or butter/casein in Australia.

³¹ The only exception for cow's milk cheese is soft ripened varieties such as Brie and Camembert. There is no quantitative restrictions on access to the U.S. market only a tariff duty of less than 10 per cent.

in Japan is under a cloud as a result of the ongoing economic stagnation.

The alternative of placing a large proportion of growing milk production into WMP runs the risk of supply outstripping demand on the world market.

Is China the Savior?

Possibly!

China's total dairy imports surged between 1996 and 2000. The largest growth was in whey powder but both NDM and WMP imports grew rapidly;

- *NDM from 5,556 tonnes in 1996 to 21,879 tonnes in 2000, and*
- *WMP from 13,751 tonnes in 1996 to 50,891 tonnes in 2000.*

Imports, however, fell in the first half of 2001. This may reflect a combination of factors including high milk protein prices encouraging substitution by whey proteins, restricted import availability and destocking. It may also reflect the impetus of the rapid development of the dairy sector boosting the milk self-sufficiency ratio.

Raw milk production increased from 6.73 million tonnes in 1995 to 9.19 million tonnes in 2000. Production is forecast to expand to 14 million tonnes by 2006.

Dairy consumption was seven kilograms per person in 2000 but the central government has set a target of 10 kilograms by 2005. Achievement of this target would still necessitate large-scale imports but a shortfall would in all likelihood reduce import demand.

China Imports - Tonnes

Category	1996	1997	1998	1999	2000
Milk	7,274	10,083	8,884	14,943	29,853
SMP	5,556	7,727	10,916	16,096	21,879
<i>Growth rate</i>	---	39.1%	41.3%	47.5%	35.9%
Butter milk	132	36	231	4,187	2,354
WMP	13,751	19,827	20,136	40,505	50,891
<i>Growth rate</i>	---	44.2%	1.6%	101.2%	25.6%
Condensed milk	914	286	233	1,784	647
Yogurt	290	196	369	602	200
Whey powder	48,090	71,391	69,179	83,200	122,794
WPC	2	9	25	20	2,129
Butter	780	353	485	3,294	3,034
Cheese	345	235	459	1,182	1,968
Lactose	1,149	1,680	2,464	5,309	10,828
Cocoa Prep	3,508	7,598	4,187	4,533	4,755
Infant formula, retail	93	318	737	5,096	7,500
Ice cream	645	491	338	1,272	573
Casein	1,120	1,407	1,953	1,994	1,999
Total	83,649	121,638	120,596	184,018	261,405

The interplay of key supply and demand variables are outlined below.

Factors influencing future raw milk production are;

- The number of cows versus the quality of cows in terms of raw milk yields. The total number of cows is about 4.9 million, while the unit raw milk yield is quite low (at about 1,700 litres per year). Great efforts are being made to both increase the number of cows and improve the quality of cows.
- Efficiency of milking, collection and transport systems: households with an average herd size of 2-3 cows raise 67 per cent of milk cows. This results in low efficiencies.
- Quality of raw milk in terms of nutrition and hygiene levels: Overall the hygiene level of milk is fairly low, while nutrition levels vary from region to region. The general situation is that raw milk produced in North China is more nutritious than that in East and South China.
- Improved infrastructure: Improved conditions of cold chain and transportation are helping to improve the quality of raw milk.

Factors influencing future dairy consumption are;

- Quality improvements in raw milk, hygiene and product development.
- Promotions by government and industry: Both the government and the industry are make great efforts to promote dairy consumption. The school milk program is a very good example of this.
- Increase of income levels nationwide, particularly in rural areas.

- Changes in lifestyle: Frequent exposure to western style food of the Chinese people, especially the younger generation, has made changes in people lifestyle and resulted in greater acceptance of dairy products as part of the daily diet.
- Improved infrastructure of cold chain, retailers and supermarkets makes dairy products available to both urban dwellers and rural population but it will take a long time for the rural population to consume dairy products as much as the urban people do now.
- Foreign investment by companies such as Danone, Unilever and Nestle are bringing in capital and technical skills.
- WTO membership binding dairy import tariffs prevents arbitrary alteration. The bound tariff rates for milk powders is scheduled to drop from 25 per cent to 12 per cent.

In summary the current estimated milk deficiency ratio of seven per cent to eight per cent is expected close to five per cent by 2006. However, during this period a sustained expansion in per capita consumption of the order of 40 per cent is forecast to occur. If eventuating this will lead to further growth in import volumes.

Milk powder prices - less volatility?

Price volatility is likely to continue unabated in the next 5 years. With URAA liberalisation completed by at the latest mid 2001 there is a medium term gap until the results of the Doha Round are implemented. The gap could last for five years or longer.

Structural surpluses will continue to exist primarily in Western Europe and North America, placing pressure on Governments to dispose of this surplus either through internal schemes or via export. The latter includes food aid.

SMP

The U.S. support price for NDM has traditionally been the price ceiling for trade except in very tight market circumstances such as 1995 and 2000.

While a ceiling will continue to exist because price support will remain in the 2002 farm bill U.S. policy may not establish the ceiling toward the end of the period because of implementation of the EU's Agenda 2000 CAP dairy reforms.

With the 2002 Farm Bill likely to maintain the current support price of \$9.90 per cwt³² there is relatively limited degree of flexibility in further tilting the butter/NDM support prices after the changes in made on May 30, 2001 unless the Federal Government risks stockpiling butter again as happened in the early 1990's.

With the EU, however, mandated to cut their support price to Euros 1,747 per tonne on 1 April 2007 and given their large structural surplus, the exchange rate differential will play a major role in determining the price ceiling.

Assuming a Euro is worth 90 cents and a further tilt in the U.S. support price to 80 cents per pound for non-fortified NDM in 2002 the respective ceilings are very close. After 2005 three annual reductions in the EU's NDM support price of five per cent each will see a substantially lower price ceiling - assuming the Euro's value remains around 90 cents.

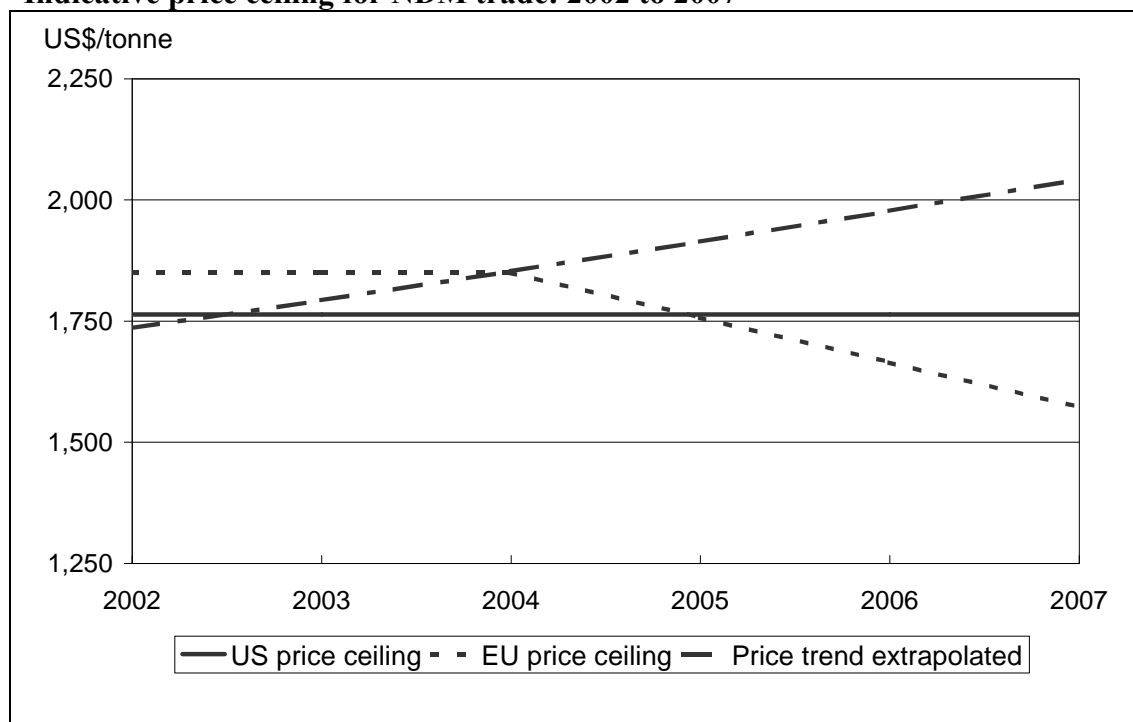
A ceiling at an indicative price of less than \$1,800 per tonne fob is conducive to stabilising trade volumes compared to the wide swings accruing in the previous decade.

Extrapolating the price trends of the period 1990 to 2001 indicates does not appear feasible given the likely large structural surpluses in both the U.S. and EU³³. As a result price volatility is likely to continue because of no real change in supply fundamentals

³² At 3.67 per cent fat test

³³ The projected NDM price is based on the average fob in the 1990 to 2001 period of \$1,680 tonne compounded at the annual growth rate of 3.3 per cent for 2002.

Indicative price ceiling for NDM trade: 2002 to 2007



WMP

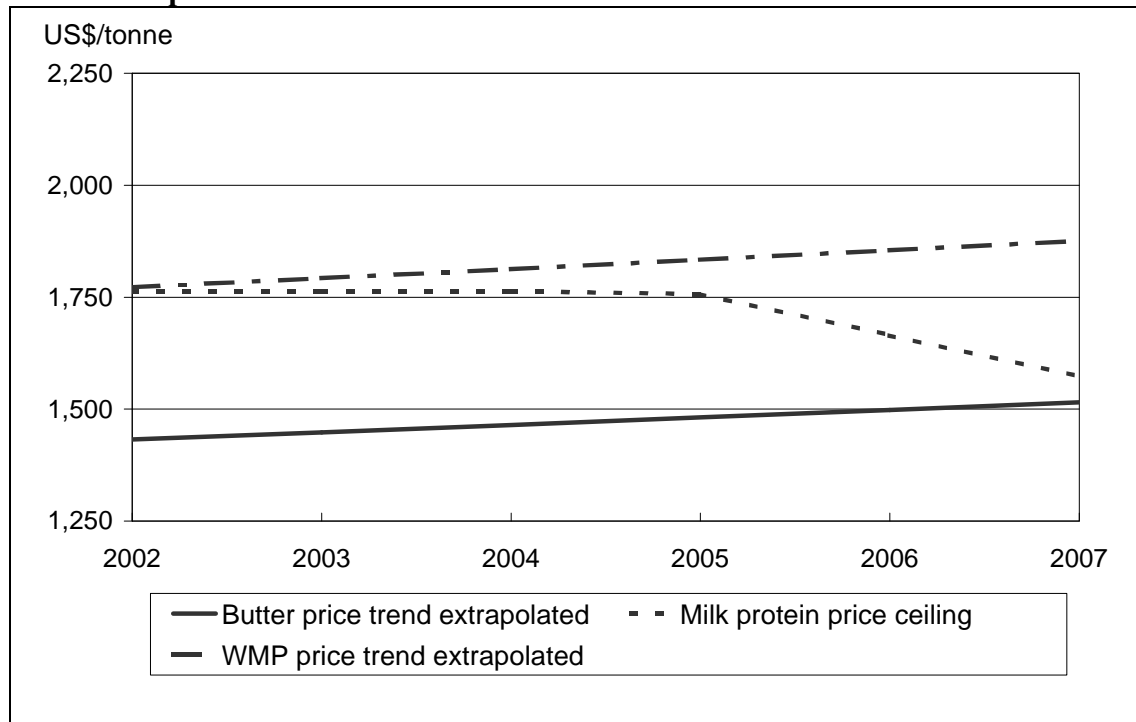
Despite being the most consistent growth product of world dairy trade, the price will be largely influenced by movements in milk protein (NDM is the proxy) and milkfat (butter is the proxy) fobs.

Butter prices have been relatively subdued since 1995 reflecting the stability of world trade - basically since 1990 a zero growth outlook. The quota restrictions on access to the two largest consuming markets (EU and U.S.) and the competitiveness of substitutes in yellow fats market points to limited upward potential in the international price.

The nominal butter fob price increased by a compound rate of 1.1 per cent per annum between 1990 and 2001.

With the wide range of ingredient applications of WMP there is likely to be continued solid growth in trade volumes.

Indicative price band for WMP trade: 2002 to 2007



The challenges for the Australian Dairy Industry

This decade will witness the emergence of a more diversified and competitive supplier base for dairy ingredients. In turn this will influence company investment decisions on a global basis as players in an increasingly consolidated processing sector seek to gain a competitive advantage.

The challenge for Australian dairy industry in the next five years is to ensure markets remain as open as possible on a multilateral basis so as to maximize potential returns from exporting. The key reason is returns to shareholders (mostly co-operative farmer members) are tied to international price trends.

The other major challenge is adjusting to the increasing supply competition. To maintain competitive advantage Australian processors need to continue to move up the value added chain for dairy ingredients. This involves considerable market research and R&D expenditure underpinned by risk taking and a turnover sufficient to generate these funds.

Conclusion

To blossom in the next five years world dairy trade needs a circuit breaker. In the hiatus between 2001 and implementation of the outcomes of the Doha Round of WTO negotiations no further disciplines will be placed on the distortion of international trade by subsidisation of exports nor will market access be improved, unless as part of a regional or bilateral pacts.

While proposed major regional trade agreements such as FTAA and EU-Mercosur could boost dairy trade volumes the benefits can only accrue to a select number of nations. These developments could balkanize dairy trade, particularly *if the issue of trade distorting export subsidies; market access restrictions and cutting domestic supports are largely resolved in these negotiations.*

From an Australian dairy industry perspective "balkanization" would be a most unwelcome development as the industry has ambitiously and bravely totally deregulated the pricing structure for both manufacturing (industrial) and fluid milk over the 14 years to mid 2000.

The end result has been a complete turnaround in industry perception and confidence from twenty years ago of an inward looking with import replacement ambitions and stagnant milk production to a sector in 2001 exporting, unsubsidised dairy ingredients to over 120 nations.

A comprehensive trade liberalization package negotiated under the auspices of the WTO (Doha Round) offers the best opportunity to encourage the emergence of a globally modern and efficient dairy industry. A "globalized" industry would be able to attract the investor interest and capital required for competing successfully against the growing number of beverage and food substitutes.

However, with globalization proceeding irrespective of trade outcomes (the latter influences the speed) their will be continued shift of production resources to those regions offering a competitive advantage in milk procurement. Globalization is also driving rapid consolidation at the farm and value added ingredient processor levels.

These trends will not abate but possibly gather greater momentum in the medium term as dairy seeks to emulate many other industries where competitive pressures have led to globalisation of sourcing and distribution.

Structural surpluses will continue to persist in both the EU and U.S. because support price programs will remain in place until at least end March 2008 (EU) and end September 2007 if a five-year farm bill becomes law. This will ensure continued domestic industry lobbying for respective Government to "dispose" of this surplus through public stockpiling and subsidised exports in one guise or another, including food aid.

Pressure will also be maintained to keep market access commitments to the minimum possible volumes. This pressure is designed to both insulate wholesale prices from international market prices and keep them as high as possible - with potential benefits to both farmers and processors even if price volatility is encouraged.

As a result dairy commodity price volatility on the world market is anticipated to be as intense as during the period 1990 to 2001. The continuation of the roller coaster

price rise will not benefit those involved in the supply chain i.e. farmers, processors, distributors or retailers because of the uncertainty engendered.

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